

# **CIRCULATORY AND RESPIRATORY SYSTEMS**

## **TARGETED NH FRAMEWORKS FOR SCIENCE LITERACY**

S:LS1:6:2.4 Recognize and describe the hierarchical organization of living systems, including cells, tissues, organs, organ systems, whole organisms, and ecosystems.

S:SPS2:6-2.3 Estimate or predict the effect of making a change in one part of the system will have on other parts and on the system as a whole.

## **CHILD-FRIENDLY ESSENTIAL STANDARD(S)**

*I am able to make sense of the structure of living systems from the smallest cells, to tissues, organs, organ systems, whole organisms, and even ecosystems.*

*I am able to predict how changing a part of a system will affect other parts of the system or the whole system.*

## **PRIOR KNOWLEDGE (Presented in previous grade levels)**

- In 4<sup>TH</sup> grade, students study:
  - o Digestive systems of plants (photosynthesis) and animals
- In 5<sup>TH</sup> grade, students study:
  - o Skeletal system: function of bone marrow, 26 different bones, shape and support, attachment to muscles, red blood cell production in bone marrow
  - o Living system organization will be introduced: cells, tissue, organ, organ system, organism
- In health and physical education
  - o Students take pulse rates
  - o Learn about cardiovascular health and exercise
  - o Learn about perils of smoking and unhealthy diet on heart health
  - o Study of endocrine system

## **ESSENTIAL UNDERSTANDING(S)**

Living organisms are complex and require understanding of and attention to the many different systems that comprise them.

## **CONTENT/SKILLS DEVELOPED IN GRADE 6**

- 1) Students will identify how the circulatory and respiratory system are organized as a living systems: cells, tissue, and organs
- 2) Students will demonstrate an understanding of the structure and function of the heart and lungs
- 3) Students will explain how the circulatory and respiratory work together.

- 4) Students will explain the flow of blood through the body and the function of blood cells and vessels in the circulation of blood
- 5) Students will evaluate how the structure of a vessel or cell is linked to its function.
- 6) Students will explain why inhaling and exhaling are necessary functions.
- 7) Students will explain the role that CO<sub>2</sub> and O<sub>2</sub> play in cellular respiration.
- 8) Students will explain how their health can be compromised by an unhealthy lifestyle.

## **VOCABULARY**

### **Prior Knowledge**

Cells  
CO<sub>2</sub>  
O<sub>2</sub>

### **Introduced**

White blood cells  
Platelets  
Nasal Passages  
Epiglottis  
Trachea  
Larynx  
Bronchial Tubes  
Alveoli

### **Mastered**

Tissue  
Organ  
Organ Systems  
Organism  
Circulatory system  
Heart  
Red blood cells  
Veins  
Arteries  
Capillaries  
Respiratory System  
Lungs  
Diaphragm  
Inhale/Exhale